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Teargas, taboo and transformation: A neo-institutional study of community resistance and the struggle to legitimize subway projects in Amsterdam 1960–2018

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Abstract

The last decades have witnessed an increasing prevalence of community resistance against large-scale infrastructure projects that pose serious threats to their environment, calling for further empirical scrutiny. Hence, this paper applies a neo-institutional lens to investigate how project actors who plan and implement large-scale infrastructure projects respond to community resistance in their attempt to legitimize and embed these projects in their environment. To do so, we draw from a longitudinal study of two subway projects in Amsterdam; the East line (1965–1980) and the North-South line (1995-2018). While considered crucial for urban development, both projects encountered severe community resistance by locals protecting the historic city. This resistance, in turn, prompted 'institutional work' by project actors to socially (re)construct the projects in pursuit of legitimacy from the Amsterdam community. The twofold contribution of the paper to the field of project studies is (1) the application of a neo-institutional lens showcasing the dynamic interrelation between projects and their environment, processes of institutional transformation, and practices of institutional work; and (2) the longitudinal empirical account exhibiting the contextual dialectic of resistance and accommodation with an emphasis on shifting approaches of institutionalization, the constant struggle to acquire legitimacy, and the local embeddedness of projects.
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Keywords: Infrastructure project; Neo-institutional lens; Legitimacy; Community resistance; Local embeddedness

1. Introduction

While large-scale infrastructure projects are important mechanisms and symbols for modernization and urban development (Altshuler and Luberoff, 2003; Van Marrewijk, 2017), they can pose serious threats to external stakeholders in their environment (Aaltonen and Kujala, 2010; Harvey and Knox, 2015). These threats are not only structural, but can be social, cultural, political, and ecological, catalyzing 'self-induced shocks' (Grabher and Thiel, 2014) and resistance from local communities (McAdam et al., 2010; McAdam, 2011; Teo and Loosemore, 2011; Teo and Loosemore, 2012; Hanna et al., 2016; Di Maddaloni and Davis, 2018; Liu et al., 2018). For example, the Dakota Access Pipeline project recently made headline news as activists protested the project's threat to the ecological environment and Native American culture, leading to conflicts with local authorities (Whyte, 2017). Other projects never came into existence due to resistance, such as the extension of the Stockholm rail (Corvellec, 2001), an ambitious urban redevelopment and railway project in Stuttgart (Novy and Peters, 2012) and the construction of a new Mexico City airport (Dewey and Davis, 2013).

Indeed, McAdam (2011: 86) argued that while most technical challenges encountered during the construction of large-scale projects can be tackled, primary threats "now take

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the form of misunderstandings and conflicts resulting from conflicting institutional frameworks or from the reactive mobilization […] opposed to construction." The main implication is that projects are inter-institutional, involving various actors from a complex and fragmented institutional environment who act according to diverse institutional frameworks, prescribing particular interests, norms, rules, practices, as well as time conceptions, belief systems, and cultural schemas (Dille and Söderlund, 2011; Scott and Levitt, 2017). Hence, the longstanding, technocratic perspective of projects as monolithic constructions closed off from their environment has become heavily criticized (Moulaert et al., 2003; Grabher, 2004; Van Marrewijk, 2015), making way for the increasing acknowledgement that "no project is an island" (Engwall, 2003: 789).

To better understand the complex relationship between a project and its environment, project management scholars have increasingly turned to institutional theory; particularly neo-institutional theory (e.g. Holt, 2011; Sydow and Staber, 2002; Scott, 2011; Dille and Söderlund, 2011; Morris and Geraldi, 2011; Aaltonen, 2013; Scott and Levitt, 2017; Biesenthal et al., 2018). In project studies, neo-institutional theory underscores a project's legitimacy, being its social acceptability and credibility (Scott, 2011; Scott and Levitt, 2017), and investigates how project organizations seek to acquire legitimacy and support from their wider social context to become feasible and locally embedded (Manning, 2008; Aaltonen, 2013). Notwithstanding the value of neo-institutional theory for project studies, the field has not yet fully explored this theory as a conceptual lens (Scott and Levitt, 2017; Geraldi and Söderlund, 2018; Biesenthal et al., 2018). Moving beyond traditional institutional perspectives providing a rationalistic and economic view of organizations and their environment, with a focus on efficiency, control and regulation, a neo-institutional lens provides a humanistic view with an emphasis on social, cultural, and political dynamics in the ongoing pursuit of organizational legitimacy (Powell and DiMaggio, 1991; Scott, 1995; Meyer and Rowan, 2006; Greenwood et al., 2008; Scott, 2011).

Applying a neo-institutional lens, the aim of this paper is to investigate how project actors, comprising administrators, managers, and practitioners who plan and implement large-scale infrastructure projects, attempt to gain legitimacy and respond to community resistance in order to embed these projects in their environment. Here, gaining legitimacy means to sanction, authorize or justify a project with the purpose of gaining public support and acceptance (Suddaby and Greenwood, 2005), while community resistance is understood as social opposition to the planning and/or implementation of a project in its local environment (McAdam et al., 2010; McAdam, 2011). Given the increasing prevalence and impact of social opposition and collective actions against large-scale infrastructure projects (Teo and Loosemore, 2011; Teo and Loosemore, 2012; Hanna et al., 2016), more empirical research is needed on resistance of local communities in project studies (Liu et al., 2018), which may help develop normative, cultural and/or inclusive frameworks for stakeholder management (Di Maddaloni and Davis, 2018), that "give communities a meaningful say in [project] design and operation" (McAdam et al., 2010: 403).

To fulfill our research aim, we draw from a longitudinal, partly retrospective study of two large-scale infrastructure project cases in Amsterdam to build two subway lines; the East line (1960–1980) and the North-South line (1995–2018). While both projects evidently served as important means for urban renewal and development in Amsterdam, they were met with fierce community resistance by residents and activists 'protecting' the historic city and monumental buildings. This resistance, in turn, prompted various responses, practices and strategies – i.e. institutional work (Lawrence et al., 2013) – of project actors in their ongoing attempt to acquire legitimacy and embed these projects into the Amsterdam community over time. This research makes two contributions to the field of projects studies. The first is the theoretical application of a neo-institutional lens to shed light on the interrelation between large-scale projects and their environment, processes of institutional change and transformation, and practices of institutional work. The second is our longitudinal empirical investigation to delineate the contextual dialectic of resistance and accommodation with an emphasis on shifting approaches of institutionalization, the constant struggle to acquire legitimacy, and the local embeddedness of projects, as asked for by scholars (McAdam, 2011; Scott et al., 2011; Scott and Levitt, 2017).

The paper is structured as follows. First, neo-institutional theory will be introduced and succinctly reviewed, after which the relevance of applying a neo-institutional lens in the field of project management will be validated. Subsequently, the qualitative research methods used in this study will be explained and the choices that have been made in delimiting the research field. Third, the findings will be shared addressing the planning and implementation of the East line and the North-South line, the resistance these projects triggered in the Amsterdam community, and the responses, practices, and strategies of project actors to gain legitimacy. Finally, in the discussion and conclusion sections we share our analysis, implications, and suggestions for future research.

2. A brief review of neo-institutional theory

In the field of organization science, neo-institutional theory has been growing steadily over the past four decades, generating an abundance of empirical research and theoretical contributions (e.g. Meyer and Rowan, 1977; Zucker, 1983; DiMaggio and Powell, 1983; Powell and DiMaggio, 1991; Scott, 1995; Greenwood et al., 2002; Lawrence and Suddaby, 2006; Greenwood et al., 2008; Lawrence et al., 2013; Thornton et al., 2015), potentially useful for project studies. Neo-institutional theory emerged between the 1970s and 1990s as a challenge to traditional rationalistic and economic conceptions of institutions (i.e. economic institutionalism) that emphasized efficiency, compliance, control and regulation, opting instead for a sociological and humanistic understanding of institutions with an emphasis on social, cultural, and political elements (Meyer and Rowan, 1977). In the words of Greenwood et al. (2008: 29): "Institutional theory evolved as an antidote to the overly rationalist and technocratic

perspectives of the 1960s [and] emphasized the role of cultural forces within an institutional context." Thus, a neo-institutional approach rejects rationality to explain how organizations are configured, and emphasizes legitimacy instead of efficiency to account for organizational survival (Thornton et al., 2015).

Among neo-institutional theorists the meaning of 'institution' is debated (Greenwood et al., 2008). This is in part because institutions can be conceptualized at various levels being micro-level institutions of individuals, groups and organizations that regulate behavior and interaction, like codes of conduct or organizational protocol; field-level institutions associated with professions, sectors and industries such as established hierarchies of occupational status; and society-level institutions concerned with democracy, family or religion such as the values of a nuclear family or the laws governing the rights of democratic citizens (Lawrence and Suddaby, 2006; Greenwood et al., 2008). Moreover, institutions can be formal (e.g. enforced laws) or informal (e.g. cultural traditions), and seen as having different elements that can be more regulative (e.g. state policies and rules), normative (e.g. norms and values) and/or cultural-cognitive (shared meanings and frames of reference) (Scott, 1995; Greenwood et al., 2008; Scott and Levitt, 2017). To organize and make sense of these diverse analytical levels and elements, a more inclusive description was articulated by Scott (1995: 33):

> "Institutions are social structures that have attained a high degree of resilience […] composed of cultural-cognitive, normative, and regulative elements that […] provide stability and meaning to social life […] are transmitted by various types of carriers, including symbolic systems, relational systems, routines, and artifacts [and] operate at different levels of jurisdiction, from the world system to localized interpersonal relationships. Institutions by definition connote stability but are subject to change processes, both incremental and discontinuous."

The main implication in organization studies is that institutions are enduring elements in social life that significantly affect the perceptions, practices, and interaction of organizational actors within a particular organizational field or environment (Scott, 1995; Scott, 2001; Lawrence and Suddaby, 2006; Greenwood et al., 2008).

Besides defining institutions, neo-institutional theory in organization studies has been more fundamentally concerned with studying the organization in relation to its institutional environment (Meyer and Scott, 1992), earlier conceptualized as the "widespread social conceptions of appropriate organizational form and behavior" (Tolbert, 1985: 2). The main objective of neo-institutionalists here is to gain insight into how organizations seek legitimacy to survive so as to become accepted and established in their environment (Deephouse and Suchman, 2008: 7), theoretically referred to as 'institutionalization'; the process by which some conception, such as an organization, practice, value or belief, becomes embedded in its context (Sillince and Barker, 2012: 31). According to Greenwood et al. (2008: 6), something becomes institutionalized when it emerges as legitimized, taken-for-granted, widely accepted, and resilient to change, whereas 'deinstitutionalization' takes place when an established institution becomes rejected and delegitimized within its wider institutional environment.

The relation between an organization and its environment has been heavily debated for several decades by institutional scholars questioning the extent to which organizations are constrained by the institutional environment in which they are situated (Tolbert, 1985; DiMaggio, 1988; Greenwood et al., 2002; Greenwood et al., 2008). Early neo-institutional theory (1970s – 1990s) mainly depicted organizations as passively constrained by their institutional environment, which was 'out there' enforcing rules, regulations, and requirements to which organizations had to conform to survive (Greenwood et al., 2008). Consequently, it was critiqued for overemphasizing institutional determinism and the uniformity of organizations becoming isomorphic (i.e. conforming) to demanding and overbearing institutional environments while underplaying the role of interest, agency, institutional change and processes, and the varying organizational responses and practices to deal with institutional pressures and dynamics (DiMaggio, 1988; Dacin et al., 2002; Lounsbury and Boxenbaum, 2013; Suddaby et al., 2013).

To address these shortcomings, neo-institutional scholars began investigating new topics; organizational practices and strategies to obtain 'legitimacy' (Suddaby and Greenwood, 2005; Deephouse and Suchman, 2008; Suddaby et al., 2013); the conditions and processes of 'institutional change' and '(de) institutionalization' (Johnson, 2000; Greenwood et al., 2002; Sillince and Barker, 2012); the varying 'institutional logics' (i.e. socially constructed practices, values, beliefs, rules etc.) across organizations, fields, and time periods that are often conflictual, thereby providing the capacity for change (Friedland and Alford, 1991; Lounsbury and Boxenbaum, 2013; Thornton et al., 2015); and finally, the 'institutional work' of purposive actors aiming to create, maintain, and disrupt institutions (Lawrence and Suddaby, 2006; Lawrence et al., 2013). The theoretical significance of these topics lies in their more critical engagement with and elaboration of the interrelation between actors, organizations, and their intuitional environment as dynamic, co-constitutive, contested, and prone to change (Greenwood et al., 2008; Suddaby et al., 2013; Lawrence et al., 2013; Zilber, 2013).

3. Applying a neo-institutional lens in the field of project management

When we apply a neo-institutional lens to study the interrelation between actors, projects, and their institutional environment we see three significant insights that are relevant for the field of project management. First, a neo-institutional lens enables project scholars to deconstruct the dynamic and recursive relation between a project organization and its institutional environment (Sydow and Staber, 2002). Specifically, it invites scholars to investigate how projects are situated as temporal, permeable organizational units in an institutional

environment which enables, directs and constrains them (Scott et al., 2011; Maaninen-Olsson and Müllern, 2009), and how the institutional environment, in turn, is shaped by the plans, purposes, and practices of project actors as they co-create standards of what constitutes a legitimate and acceptable project within a particular environment (Scott and Levitt, 2017). Accordingly, this gives insight into the inter-institutional nature of large-scale infrastructure projects (Dille and Söderlund, 2011), characterized by a complex network of "multiple 'authorities' and 'audiences', varying legal jurisdictions and agencies, diverse reference groups, and numerous conflicting 'stakeholders' proffering alternative bases of legitimation" (Scott, 2011: 60). In short, large-scale infrastructure projects are inextricably entangled with their institutional environment, spanning institutional boundaries and encapsulating diverse and conflicting institutional frameworks; a phenomenon that requires further empirical and theoretical investigation in the field of project management (Sydow and Staber, 2002; Scott and Levitt, 2017).

Second, a neo-institutional perspective can help us gain insight into how the dynamic interface between a project and its environment can provide opportunities for institutional change and transformation. The longstanding technocratic, instrumental, and/or economic approach to project management, aimed at enhancing performance, efficiency, effectiveness, and cost-benefit ratio over time, has proven largely incomplete and unsuccessful (Engwall, 2003; Söderlund, 2004; Hodgson and Cicmil, 2006), calling for a more humanistic, inclusive, and environmentally considerate approach which neo-institutionalism can provide. A neo-institutional perspective informs us that to gain legitimacy a project must not only conform to laws and rules from a regulatory standpoint, but must also be equitable and fair from a normative standpoint, as well as accepted and supported by the affected community from a cultural standpoint (Scott and Levitt, 2017). In a similar vein, though stakeholder management has gained increasing attention in project studies (e.g. Aaltonen and Kujala, 2010; Aaltonen, 2013), an instrumental and economic approach focusing on sponsors, suppliers, and customers has been dominant, requiring "a more inclusive and holistic approach for engaging with a broader range of stakeholders" (Di Maddaloni and Davis, 2018: 543). Only recently have institutional theorists (Schneiberg and Lounsbury, 2008; Greenwood et al., 2008; Lawrence et al., 2013; Martí and Fernández, 2013) and project scholars (McAdam, 2011; Teo and Loosemore, 2011; Hanna et al., 2016; Di Maddaloni and Davis, 2018; Liu et al., 2018) begun to address the role of local communities as important stakeholders and how they influence organizational practices and processes, and to theorize resistance and conflict as potential catalysts for institutional change and transformation.

Third, a neo-institutional approach can help us zoom in on the institutional work (Lawrence et al., 2013) project actors carry out to acquire legitimacy, to mitigate the social impact of a project on its environment, and to respond and/or accommodate to institutional pressures and conflicts, especially stemming from threatened stakeholders such as local communities who problematize or oppose construction (Grabher, 2002; McAdam, 2011; Scott and Levitt, 2017; Di Maddaloni and Davis, 2018; Liu et al., 2018). Institutional work in the form of responses, practices, and strategies of purposive project actors is crucial for the institutionalization of large-scale infrastructure projects, requiring improved stakeholder management, external communication and consultation, public relations and participation, and more cooperative and inclusive approaches (Aaltonen and Kujala, 2010; Lehrer and Laidley, 2008; McAdam et al., 2010; Di Maddaloni and Davis, 2018).

According to Suddaby and Greenwood (2005), practices of institutionalization are based more on the social skill of organizational actors to construct accommodation with extant cultural frameworks rather than to rely on the economic performance or technical superiority of an organization. Therefore, organizational actors must utilize symbolic practices that attach new constructions or innovations to extant cultural frameworks to persuade the relevant community of affected actors to accept them. From this perspective, institutionalization is essentially a political and strategic process transpiring between authorities and audiences, involving symbols, myths, ceremonies, hierarchies, and power dynamics (Meyer and Rowan, 1977; Meyer and Scott, 1992; Brown, 1994; Greenwood et al., 2008; Suddaby and Greenwood, 2005; Sillince and Barker, 2012). For example, the construction of the Øresund Bridge, connecting Denmark and Sweden, used so-called 'cultural technologies' such as ritualization, narration, 'imagineering' and aesthetization to legitimize the project and constitute a transnational territory by integrating municipalities and cultures (Löfgren, 2008). It follows that institutional work comprises a repertoire of creative social and cultural strategies (Sillince and Barker, 2012) that can be used to (re)shape the relationship between a project and its institutional environment (Meyer and Scott, 1992).

To encapsulate, we will apply a neo-institutional lens in the field of project management to study the dynamic and co-constitutive relation between large-scale infrastructure projects and their environment, to shed light on institutional change and transformation stemming from institutional conflicts and pressures, and to show the institutional work of project actors used to gain legitimacy and to embed a project in its institutional environment.

4. Methods of data collection and analysis

We use a qualitative–interpretive paradigm and a neo-institutional lens to address social and cultural dynamics of two large subway projects and their institutional environment in Amsterdam. The interpretive paradigm assumes that "the social world […] is local, temporally and historically situated, fluid, context-specific, and shaped in conjunction with the researcher" (Bailey, 2007: 53). Our research comprises two case studies: The East line (1960–1980) and the North-South line (1995–2018). According to Eisenhardt and Graebner (2007), case studies elaborate the rich, real-world context in which phenomena occur, and facilitate theory building as unique analyses emerge from identifying patterns in the dataset.

Given its historical time period, for the East line subway project we solely carried out a retrospective study and secondary document analysis of archival data, including secondary interviews and news reports (Wiegman, 2006; Cohen, 2008; Rosenberg and Berkhout, 2010; Smeets, 2012; Schoonberg, 2013; Pen and Verkerk, 2015), photographs (Stadsarchief, 1975; Westelaar, 1975), documentaries (Hoeben, 1997; Polak, 2000; Cats, 2015), and academic sources (Kaiser, 1976; Baart, 1977; Davids, 2000; Boelens, 2010; Mak, 2012; Verlaan, 2014; Langstraat and Switzer, 2015; Verstraete, 2016). For the North-South line, besides carrying out a retrospective study and secondary document analysis (e.g. Survey-Committee-North/Southline, 2007; Berkhout and Rosenberg, 2008; Gemeentelijke-Ombudsman, 2009; Soetenhorst, 2011; NPO, 2016) akin to the former project, we were also able to conduct intermittent qualitative field research.

Between 2010 and 2014 participant-observation and in-depth interviewing were executed in the North-South line project. Participant-observation was carried out at various events: the launch ceremony of the first phase (March 11, 2010), and the second phase (28 April 28, 2011) of tunnel drilling, the incident of a tunnel leakage at the Vijzelgracht (January 17, 2012), and the submergence of part of the tunnel in the IJ waterway (September 25, 2012). Furthermore, we attended underground project excursions with the technical director (October 10, 2012), and with an employee (March 15, 2012), and two open-days on the annual 'Day of Construction' (June 2, 2012 and June 3, 2013), supplemented with regular visits to the project organization's headquarters, the information centre, and construction site look-out points set up throughout the city for residents. As a resident of Amsterdam, the first author kept up to date about the project's progress on the local news, Facebook, Twitter, blogs and on the official project websites https://www.amsterdam.nl/noordzuidlijn/, http://wijnemenjemee.nl, and www.hierzijnwij.nu/live (the last airing live camera footage of construction work).

Additionally, between 2006 and 2010, participant-observation was carried out at knowledge sharing platforms and a community of practitioners for Dutch public project managers where the second author was appointed the advisory role of cultural expert and engaged scholar. Apart from participant-observation, 10 in-depth interviews were held in Dutch with diverse project actors of the North-South line: 5 communication advisors, 3 project constructors/contractors and 2 project administrators. Interviews took approximately 1 to 2 h, and were transcribed, translated to English, and coded for analysis.

The analysis of our data was guided by our aim: to apply a neo-institutional perspective focusing on the interface between the planning and implementation of large-scale infrastructure projects, the reactive resistance catalysed in the affected community, and the responses, practices, and strategies of project actors to gain legitimacy and embed these projects in their environment over time. Consequently, the collected data from the East line and North-South line was structured and coded according to our four themes of interest: (1) project planning, (2) project implementation, (3) community resistance and (4) project responses, practices and strategies (see Table 1 for a summary of these themes and corresponding data on p. 23). This enabled us to chart the development of each project over time and to compare and contrast the two project cases for patterns of institutional dynamics; especially concerning institutional conflicts, change and transformation.

5. Planning and implementing the East line for urban development

In 1965, the Dutch government and Amsterdam municipality planned to build a metro through the east of the city, called the East line. Administrators assumed that the East line project would be technically and socially less complex than constructing the North-South line which was initially planned first in the early 1960s. Both metro projects were part of a much grander urban renewal plan to establish more business venues and prospects in the city centre, to move residencies to quieter neighbourhoods surrounding the centre, and enhance the transport system between the centre and these suburban areas via the metro lines and a new highway, so citizens could easily travel back and forth (Polak, 2000; Pen and Verkerk, 2015).

To the dismay of many residents, the East line would pass under the historic neighbourhood the 'Nieuwmarkt' on its way to the east; a monumental market square in the heart of Amsterdam just south of Central Station. This plan triggered a lot of social unrest among the Amsterdam community, which was known for its liberal and left-wing political standing and became wary of the implications it might have for the Nieuwmarkt neighbourhood and the city structure at large. As one former protestor said, "the [metro] plans were used to transform the entire structure of the city" (Cats, 2015). Though this social unrest was voiced by the community, even before the East line was implemented, at this time administrators and project developers were relentless in their urban renewal plans. Reflecting on this time period in Amsterdam, and on urban renewal plans in the Netherlands more broadly, Verlaan (2014: 178), argues that:

> According to modernist planning doctrines […] civil servants and municipal administrators worked until the late 1970s on drastic urban renewal plans in which demolition and traffic breakthroughs prevailed [and in which] there was little room for the opinion and participation of the community.

Similarly, Boelens (2010: 4) claims that many infrastructure projects during this time, including the East line, were criticized because of their "esoteric, non-democratic decision-making in back rooms, and a sort of 'hit-and-run' mentality of project developers, aimed at short term (economic) effect and not on sustainable (societal) gain." With this approach, dominated by authoritative public administrators and technically oriented engineers, the East line was implemented (Langstraat and Switzer, 2015).

6. Community resistance triggered by the East line

Because the technology for tunnel boring in soft subsoil was not yet available, the East line project implementers would first build the 3.5-kilometre tunnel tube and then sink chunks of it underground via colossal concrete caissons, called the 'caisson-method'. Unfortunately, this meant that a substantial part of the Nieuwmarkt neighbourhood would be evacuated and demolished (Soetenhorst, 2011). When the demolitions commenced, many residents were unwilling to leave and the public responded with major protests going on for weeks, comprised of threatened residents, squatters, artists, architects, journalists, and academics who strongly rebelled against the metro project, and large-scale urban renewal plans more generally, portraying themselves as 'monument protectors' (Soetenhorst, 2011; Verstraete, 2016; Verlaan, 2014). They mobilized in the form of social movement organizations such as the 'Action-Group Nieuwmarkt' and 'the Strong Arm' and marched on the streets in the city centre, chanting and holding banners saying, "stop the demolition!" "protect the heart of Amsterdam!" and the more popular slogan "*geen buizen, maar huizen*!" translated as "no (metro) tunnels but homes!" (Hoeben, 1997; Cats, 2015). The resistance against the Nieuwmarkt demolition and metro project was not only a local issue for the neighbourhood and Amsterdam, but it also became a national issue, fuelled by the media which problematized large-scale and societally invasive technological development (Cats, 2015).

Resistors legitimized their protests with arguments for remaining in and preserving their historic neighbourhoods like the Nieuwmarkt, and for providing cheaper housing and better social-cultural facilities for the extant community, rather than building for the sake of transport, business, and marketing (Verlaan, 2014; Boelens, 2010). One former protestor explained that: "our most important points of protest were: the high costs of the metro, the demolition of the city and the neglecting of residents" (http://wijnemenjemee.nl/nieuws visited 27-03-2017). The main institutional conflict between administrators and resistors of the East line was that the former lobbied for modernization and a stricter separation between living, working, and consuming, whereas the latter wanted these elements to remain integrated and protected from drastic urban renewal plans. The East line therefore became a symbol for a societal separation that the majority of the Amsterdam community did not want (Kaiser, 1976; Cats, 2015). Therefore, the tension between business and modernization on one hand and culture and preservation on the other became an important struggle that formed the basis of the institutional conflict that emerged during the implementation of the East line (Boelens, 2010).

The more peaceful protests, which were left unanswered and unaccommodated, quickly developed into violent ones, particularly during the infamous 'Nieuwmarkt riots' more generally known as the 'metro riots' on March 24 and April 8, 1975. These riots were so fierce that the Dutch government mobilized Military Police who used bats, teargas bombs, and water cannons to suppress the riots (see Photo 1). A former activist reflected that in response to the riots "the government just put in tough 'bat-beaters' [Military Police], people were beaten up and even the routes to the hospitals were blocked." (http://wijnemenjemee.nl/nieuws visited 27-03-2017). Thus, many protestors were injured and/or arrested, and the majority of Amsterdam residents and Dutch citizens more generally who were not involved in the riots supported or sympathized with the protestors.

7. Project responses in the aftermath of the metro riots

After the riots, the 'underground metro' of Amsterdam received a "reputation of violence, repression, mismanagement, spatial disaster, economic tunnel vision, and fierce social, political, and cultural opposition" (Verstraete, 2016: 85). Though the project organization completed the East line despite major resistance, there were several significant responses of and practices used by project actors to deal with the despondent and controversial aftermath of these riots. A major response was that the minister publicly stated that after the completion of

Photo 1. Water cannons during *Nieuwmarkt* riots (taken by Hans Peter, 1975).

the East line, no other metro would *ever* be built in Amsterdam, including the North-South line plan which was already formulated in the 1960s. Consequentially, after 1975, 'the metro' in all its forms, even when merely verbalized, became institutionalized as taboo in Amsterdam and the 'economic tunnel vision' became deinstitutionalized (Soetenhorst, 2011; Langstraat and Switzer, 2015). For example, related urban renewal plans such as a new four-lane highway that would pass through the city center (over the East line), and shop and office complexes to be constructed (along the East line) were also immediately discarded (Schoonberg, 2013; Langstraat and Switzer, 2015).

Moreover, as a kind of symbolic 'apology' of the city council to the local community, art work was exhibited at the stations of the East line to memorialize the metro riots, "dedicated to the violent history of the [Nieuwmarkt] neighborhood" (Verstraete, 2016: 86). Examples include a replication of a wrecking ball against a breaking wall of the metro tunnel, memorializing the demolitions; a photograph of a squatter in action during the demolitions displayed behind a crumbling wall, to remember the protestors during the riots; and graffiti, posters and poems made by activists which were also demolished in 1975 but were replicated to be displayed as art in the metro tunnel. In this sense, "ironically, the metro functions as an archival place for conserving things it has destroyed" (Verstraete, 2016: 88).

8. Planning and implementing the North-South line in the context of the metro taboo

Despite the controversial aftermath of the East line, the North-South line project plan was never completely abandoned and secretly re-emerged behind-the-scenes in the late 1980s. According to Davids (2000), it wasn't until over a decade later, in 1988, that the word 'metro' was included again in discussions about urban development plans and it was acknowledged that it would be extremely difficult to sell these plans to the public. Because of the conflicted institutional environment, project plans were discussed internally to evade media attention and project sponsors still used the term 'tunnel-tram' instead of metro to avoid breaking the taboo (Langstraat and Switzer, 2015). The technical director of the North-South line, largely responsible for the project's commencement, shared his experience during this time:

> I started with the plan at the end of the 1980s. That was a very difficult context, because the first experience with building metros was bad […] This left deep traumas behind in the city, among the state officials, the people, and to a lesser extent the business. In this context we had to make plans to improve the public transport of Amsterdam (interview, former project director, 23-11-2012).

He went on to explain that despite the ensuing trauma of the East line, the old plan of the North-South line kept resurfacing during discussions about improving the Amsterdam public transport because it remained "quite an addition to the system with a major transport-related value." Amsterdam was getting busier with more and more inhabitants, tourists and car traffic, and the tram net was more or less complete. Thus, an underground metro constructed with new technology (as opposed to the caisson-method) seemed like the only durable way to improve the transport system and develop the Amsterdam urban landscape without demolishing buildings (Davids, 2000).

Engineers had found the necessary technical means to construct the metro, particularly a soft subsoil tunnel boring machine. This machine enables underground tunnel excavation without the demolition of aboveground buildings, which was the main issue to be avoided after the metro riots: "We had a solution; we could do it underground" (interview, technical director, 23-11-2012). In this way they hoped to finally break the metro taboo. Slowly and silently, the new metro line was pushed into a process of decision making in the Amsterdam city council, which eventually approved the plan in 1994 to initiate the phase of project definition and preparation.

9. Community resistance against the North-South line

The promise of a technological solution didn't take away public fears. On the contrary, the secretive behaviour of administrators and the project organization roused distrust among the city and triggered resistance anew. Apart from the major financial costs, the biggest reason for resistance and fear concerned the sinking of monumental buildings which rest upon a foundation of stilts on which most of water-based Amsterdam has been built (Mak, 2012). Many wondered how the new metro stations, up to 40 m deep, could be constructed and what would happen if the tunnel boring machine passed the foundation poles and soggy underground of historic buildings. Would the poles collapse, sink, or remain stable? Due to this uncertainty and to prevent the project via legal procedures, in 1997 an alliance of residents, state officials and politicians was formed called 'the Abovegrounders'. They resisted the North-South line plans, claiming that the foundation of buildings was not strong enough and that the costs for construction would be too high for Amsterdam. The opponents of the North-South line actually "won" the referendum held to (dis)approve the metro line in 1997 (65% of the voters was against), but the outcome was proclaimed invalid due to an insufficient total amount of voters. "So we went on with the project" (interview, technical director, 23-11-2012).

The project organization attempted to legitimize the project, draw away citizens' fears, and subdue resistance by claiming that "state-of-the art" underground construction technology would have minimal risks and a high-tech system would control the possible submergence of buildings. The technical director, having the foremost authority in underground construction in the Netherlands, had initiated several test-runs for the tunnel boring machine technique between

1997 and 2002. Managers of large-scale infrastructure projects were selected by 'Rijkswaterstaat', a Dutch governmental agency which manages transport and water infrastructure in the Netherlands. In that time Rijkswaterstaat was a technically-oriented organization characterized as arrogant, intrusive, and a bastion with a strong internal focus and pragmatic logic when interacting with the environment (Berendse, 2013). Consequently, the project organization (still) highly valued an instrumental-rational perspective, focussing on technically complex problems by perceiving them as puzzles that have to be analysed and solved in isolation.

The domination of technical values was also reflected in the communication with local communities: 'There dominated a very black-white idea that the information you provided had to be [technically] correct; if you didn't know something, you didn't share it' (Van der Kam, 2016: 47), meaning that uncertainties were concealed from the public eye. Simultaneously, the project isolated itself from its environment: 'Nobody knew exactly what was going on, causing project actors to lose their grip on the situation and to retreat more and more to the background' (Van der Kam, 2016: 25). Essentially, every technical mishap was met with rage because the public was not honestly informed about the uncertainties, risks, or prepared for the technical complications from the start:

> So, actually, I think because the curtains were so shut there was a lot of distrust over the process […] they even established a political party called 'Save Amsterdam.' Well, the most important point for them was stopping the North-South line, and especially the tunnel boring. Because if the boring would proceed, then everything along the way [would collapse according to them] (interview, communication advisor, 15-6-2012).

Despite substantial opposition from the local community and varied reports, overall statistics and predictions of technical experts provided sufficient legitimacy for the Amsterdam city council to officially approve the implementation of the North-South line project on October 9, 2002 with 29 votes versus 14. At the time, the estimated costs were 1.46 billion euros with an expected delivery date in 2007 (Soetenhorst, 2011).

10. When technology fails

In the preparatory construction phase (2003–2009) of the North-South metro line, grave complications materialized resulting in technical mishaps, major cost overruns, and time delays (Soetenhorst, 2011). Most problems resulted from leakages in the concrete dam walls of the new stations through which earth water spilled into the excavation sites, causing the submergence of roads, railways and buildings in those areas, such as at Central Station, Damrak and Vijzelgracht. The incidents at Vijzelgracht were by far the most critical, drawing heated attention from the public and the media. This is where the first submergence took place in October 2004, causing seven monumental buildings to sink 2.5 cm into the ground. Later, in June 2008, four more buildings on this historic street sank 15 cm into the ground. After attempting to resolve the issue by freezing the ground or injecting it with a mixture of grout to stop further submergence they continued construction at the Vijzelgracht in September 2008. However, shortly after, another six buildings sank up to 23 cm, resulting in the evacuation of its residents.

As a result of these major setbacks, the preparatory construction of the North-South line was temporarily shut down while political discussions were held on whether to (dis) continue the project. Evidence of the survey committee appointed to analyse what went wrong and why, showed that the concrete of the dam walls was of low quality, resulting in weak spots and the ultimate leakages (Survey-Committee-North/Southline, 2007). The committee concluded that "in contrast to the political promises given, the city has suffered from significant disruption because of the construction of the North-South line" (Survey-Committee-North/Southline, 2007). Nonetheless, the ultimate verdict was that terminating the project was no longer an option; they in too deep. The Amsterdam city council therefore decided to resume the construction process. As a result of these major setbacks, the costs tripled to over 3 billion in total, the delivery was delayed to 2018, and the alderman of Amsterdam resigned (https://wijnemenjemee.nl/tijdlijn/).

In this context, the city was heaving with contestation, anger and distrust: "There were problems with trustworthiness because it's all happening on the street, right in the middle of the city" (interview, technical director, 12-11-2012). However, the wound was much deeper than that because it hadn't quite healed yet from the East line trauma. With the ghost of the metro riots hovering above their heads, the project organization tried to keep silent about the building process and shut out the public, especially regarding complications and mishaps. However, the societal and environmental impacts of these mishaps were inevitable and unavoidable:

> There was a lot of suspicion. Our engineers had always shouted 'it's all state of the art and nothing will happen. We make the road open once, cover it, and then we'll go underground.' Then things went wrong at the Vijzelgracht. Then you really got this idea in Amsterdam, 'well, they all say that it's under control and all state of the art materials and construction methods, but why does it go wrong?' Yes, and yet it goes wrong. Then the drillers came and then there was a need to bring humanity back in (interview, communication advisor, 15-6-2012).

In sum, the project organization was too technical in its focus and practice, where engineers and technical experts took the lead and attempted to keep the public at arm's length with promising predictions and calculations. But when things went wrong, the predictions had no more bearing which catalysed

more resistance from the local community. As a result, "the project had become a symbol of failures and mishaps" (interview, communication director, 22-05-2012).

11. Institutional work: project practices for gaining legitimacy

According to project actors, the skeletons had to come out of the closet, meaning that the project organization had to drastically alter its external stakeholder communication strategy and become more transparent towards the outside. Project actors were generally too focused on the technical and physical construction process while neglecting the communication and collaboration with the local community in its wider environment:

> At the start, the project organization was only busy with the project, autistic behaviour […] but we had to try to control what happened at the construction sites. That is a big undertaking, because you need a lot of collaboration from the outside, and we did not predict well enough how much we needed. It was not a given, and then we had a crisis […] I got a new director and they started building a new relationship with the environment (interview, technical director, 12-11-2012).

Though the North-South line project continued despite major setbacks and resistance, the institutional conflicts between the project organization, the government and the public gave way for a fundamental change in project management thinking and practices in 2009–2010. As newly appointed managers took over during this time, they brought with them experiences from other (inter)national projects where they had learned cultural change processes were needed to gain legitimacy from affected stakeholders (field observations, January 2009). In the case of the North-South line, dominant cultural characteristics such as isolation, distance, internal focus, research orientation, and technical knowledge had to make way for environmental, cultural, and societal sensitiveness and external stakeholder inclusiveness:

> We wanted to make a movement towards the repositioning of the project, a project of engineers, researchers and rationality and distance and more research and so on - and in this positioning you saw that all faith had been lost from the stakeholders of the city - so we said we have to go another direction (interview, communication director, 22-05-2012).

According to the new project director the cultural change worked because new norms and values, such as environmental sensitiveness, inclusiveness and openness, were enacted from within project organization; "They were not designed by external consultants, that would never have had the same results' (http://neerlandsdiep.nl/nieuws/ visited 12-05-2017).

The new 'open' communication strategy was used to (re) gain external trust and support for the project, by publicly exhibiting the construction process via videos, photographs, blogs and websites, and by providing the opportunity for residents to visit the construction sites and to interact with construction workers. The communication director explained this approach:

> After the submergence the project shut like an oyster […] so we said a part of our new course is to open up, as much as possible. It was a city project I always said, it needed to become part of the city, to involve the city by opening up the construction sites […] very transparently and realistically, to share the risks openly, to stop covering things up, [to say] 'it is what it is', to tell that to the outside, to the press (interview, communication director, 12-11-2012).

A key strategy to gain trust of Amsterdam locals was to invite and involve them to see and experience the underground, such as the tunnel, the stations and the machines, by making it more visible and accessible. This was done in the form of open days and project excursions, such as the annual 'Day of Construction'; a national and annual event during which projects in the Netherlands engage citizens in their construction process in which they could show their work and results: "This is something very important, to keep people *within* the project […] we could show people what we were doing (interview, technical director, 12-11-2014). Similarly, an underground look-out tower was installed with a camera, so people could observe the constructors live at work on the internet. Moreover, manifold excursions were organized on a weekly basis to show residents and other interested visitors a (new) object or phase of construction:

> We think that we must really show [the construction]. We want to take residents to the building sites, so we have many visits to the building sites, because we find this very important, to show the neighbourhood, Amsterdam, but also stakeholders, people with whom you cooperate (interview, communication advisor, 7-08-2013).

Project actors adhered that by holding these participatory events, societal support and legitimacy can be acquired because such occasions enable residents to gain a better perspective and understanding of the hindrance, disturbance or problems caused by the construction process. By making the construction sites accessible, residents can see, smell, hear and feel what goes on underneath the ground whereas this is usually invisible for them. The project organization also placed a giant red 3D arrow aboveground with the portraits [and names] of the tunnel borers, pointing down to show where the builders were working underground at a certain time. When the workers would move underground, the arrow would physically follow them aboveground. The arrow reads; "Here we are now!" According to the communication director, the arrow had symbolic value because "this is the movement of the

humanization of technology. [Because] it's not only about the machine but the people in the machine (interview, communication director, 12-11-2012). Furthermore, the project used virtual platforms in their attempt to absorb the resistance, unrest, and criticisms:

> On the Website we show very manifestly what kind of criticism there is on this project, what happens on Twitter you will see that on the homepage, we censor nothing, everything can be said. Well, this is this new approach of letting go, openness, realism, this is also really a value that we name, and this comes back on there [the Website] (interview, communication director, 12-11-2012).

11.1. Ritualization as a mechanism for institutionalization

Another phenomenon that was observed in the research was ritualization, involving the celebration of milestones and (phase) transitions in the project process via ceremonial events, such as signing contracts, (sub)project kick-offs and (sub) project completions or deliveries. From our analyses, three particular ritual events in the North-South line project had important symbolic, communicative, and strategic functions to help reshape the project's relationship with the environment and to embed it in its social context. With these events the communication team wanted to show "the magic", "the heroes" and the "beautiful machine" of the underground, as they mentioned during interviews.

The North-South line project organization publicly performed the official launch for the first two phases of tunnel construction using tunnel boring machines on 11 March 2010, during which the first two machines were baptized by a Catholic priest and given female names, '*Gravin'* and '*Noortje* (in this case by Amsterdam school children), according to the tradition of the tunnel construction workers. Subsequently, the same rituals were performed to launch the last two phases of tunnel construction for machine '*Molly'* (28 April 2011), and machine '*Victoria'* (15 November 2011), that were also baptized and bestowed their names to excavate the remainder of the tunnel. According to a communication advisor, these events and particularly the "humanization" of the four colossal tunnel boring machines were important to (re)direct the attention of the public away from technical mishaps and uncertainty towards the craftsmanship and traditions of the tunnel workers:

> To bring the craftsmanship to the forefront and [to show] the experience of the people who do the actual work, then these traditions [the rituals] are really suitable to show it. So, in that way in terms of communication, it really fit well. It was a very sympathetic ritual to bring the construction to the forefront […] in terms of a milestone for this project, but also a political statement, yes, in this sense the ritual had much value (interview, communication advisor, 15-6-2012).

In sum, the project actors of the North-South line made use of various creative practices and strategies, such as project excursions, open days, interactive virtual and physical platforms, and the ritualization of important milestones in the project process, to initiate and facilitate a transition from a monolithic, internal and technically-oriented structure towards a more transparent, external and human-directed one.

12. Shifting approaches to project management in the Netherlands

To understand the abrupt cultural change and new project management approach of the North-South line project organization, two developments in the institutional context of the project have to be mentioned. First, in the period of 1960–2010, community resistance was not only observed in the East line and North-South line projects but in many other large-scale infrastructure projects in the Netherlands. Therefore, discussions regarding more societally-oriented approaches of infrastructure projects started to emerge (Boelens, 2010). Public organizations in the infrastructure sector realized managers and practitioners needed to receive better training to implement societally-oriented approaches. Hence, project managers working in the public domain were trained to become more sensitive to communication, stakeholder management, and citizen engagement, establishing a cohort of civil engineers with skills to manage the societal environment.

Second, the institutional context of the in the North-South project was also influenced by the outbreak of the Dutch construction sector corruption scandal in 2004 (Priemus, 2004; Sminia, 2011). For a long time, constructors arranged pre-agreed prices for clients and thus sidestepped competition (Graafland and Nijhof, 2007). This was also the case in the North-South line in which constructors calculated prices 60%–100% higher than calculated by the client (Survey-Committee-North/Southline, 2007). The collusion scandal caused a crisis between public clients and contractors and deinstitutionalized tender practices in the construction sector (Priemus, 2004). Public clients were forced to re-institutionalize the sector according to new standards and codes of conduct. Engineers of public clients had to change their role from technical experts to supervisors of innovative collaborative arrangements (Berendse, 2013) and engage in a process of reflection on collaborative practices with contractors.

Taken together, the two studied subway project cases show the increasingly significant role of cultural forces, manifest in the community resistance and the changing responses, practices and strategies of project actors over time. We encapsulate these findings in the table below (see Table 1 to compare the East line and North-South line).

Reflecting on the evolution of subway construction in Amsterdam since the 1960s and comparing the East line and North-South line, we can see particular similarities but also differences in terms of how project actors aimed to acquire legitimacy over time, in the context of institutional pressures and conflicts as they evolved. These will be discussed in the following section.

Table 1
A neo-institutional perspective the East line and North-South line.

Themes	East line	North-South line
Project planning	[1960s – 1970s]	[1980s – 1990s]
	Legitimization based on administrative and top-down arguments of modernization, urbanization, transport and business	Legitimization based on urban development to accommodate rising population and tourism Plan to build North-South line resurfaced
	Voice of community against demolition of neighbourhoods was disregarded	Plan was formulated 'behind-the-scenes' and excluded the local community
Project implementation	[1970s – 1977s]	[1990s – 2010s]
	Legitimization based on economic and technical arguments	Legitimization based on tunnel boring machine for new metro project
	Government-oriented: use of top-down authority	Technically-oriented: focus on engineering and 'state of the art' technology
	Technically-oriented: neighbourhoods were demolished despite major protests	Failed local embedding of project: hiding from discussions with community
		Technological failures: buildings submerge between 2004 and 2008
	Failed local embedding of project: voice of community not taken into consideration, hiding from controversy over project	Project was temporarily shut down in 2008
Community resistance	[1970–1975]	[2000 – 2010s]
	Major controversy and resistance from Amsterdam community	Moderate to major controversy and resistance from Amsterdam community
	Resistance organized in social movements to preserve historic city centre	Resistance organized in political parties
		General public unrest due to metro taboo, cost overruns, time delay, technical mishaps, and sinking historic buildings
	Resistance escalated to violent 'metro riots' in 1975	
Project responses, practices & strategies	[1975–1980s]	[2010s – present]
	Legitimization through oppressive regulation: use of military police to counteract resistance	Legitimation through humanistic institutional work
		Engaging in public debate, continuing construction and finishing the project
	Hiding from public debate, continuing construction and finishing the project	Embedding project in community through serious engagement with environment
	Declaring future metro-lines taboo Discarding other urban infrastructure plans in Amsterdam	Practices and strategies for including and communicating with residents through multimedia platforms, open-days, excursions, and ritual events
	Memorializing resistance: activist-inspired art in the East line metro stations	

13. Discussion

Analysing our empirical findings concerning the project cases of the East line and the North-South line from a neo-institutional perspective, three main insights on the relation between large-scale infrastructure projects and their institutional environment come to light.

Firstly, the dynamic and recursive interrelation between the two large-scale projects and their institutional context followed similar processes. Legitimation for the planning and implementation of these projects was found in the need for urban development, sustainable transport and economic growth, and was acquired through political processes such as public administrators planning the East-line in 'back rooms' in the 1960s or the referendum held to (dis)approve the North-South line in the late 1990s. Both projects had a tendency to focus on economic and instrumental elements to gain legitimacy and did little to embed the projects in their local context, which generated much social unrest and community resistance. Only after community resistance turned into violent riots (East line) or when technology failed (North-South line) were alternative bases of legitimation sought after, focussing more on managing the impact of these projects on the local community. These findings correspond with earlier studies (Moulaert et al., 2003; Ashokan, 2015; McAdam et al., 2010; McAdam, 2011; Scott and Levitt, 2017; Di Maddaloni and Davis, 2018; Liu et al., 2018) demonstrating that large-scale infrastructure projects are inherently controversial, catalyzing institutional conflicts and resistance from external stakeholders in the local community which must be addressed sooner rather than later. In sum, the first insight of a neo-institutional perspective reveals that the dynamic interplay between actors, organizations and the institutional environment (Greenwood et al., 2008: 31) is an ever-changing institutional process that is socially constructed by the reproductive (inter)actions of diverse agents (Sydow and Staber, 2002).

The second insight provided by the neo-institutional lens showcases how in the dynamic and conflictual interface between the studied projects and their institutional environment, a gradual institutional transformation was facilitated in terms the approaches used by project actors to gain legitimacy for the project at certain points in time. Specifically, we can discern three main – what we call – 'approaches of institutionalization' that have been used to legitimize the projects; being an *administrative*, *technocratic*, and *humanistic* approach of institutionalization.

According to an *administrative* approach government authorities take the lead in investing in, devising and implementing urban renewal plans with a strong economic focus and a tendency to disregard the needs and interests of the local community (Hanna et al., 2016). This framework was especially dominant during the planning and implementation of the East line (1960–1975) which abided by modernist planning doctrines while virtually ignoring the voice of Amsterdam residents and activists (Boelens, 2010; Verlaan, 2014); and in the North-South line when the Amsterdam city council approved the project despite substantial opposition. Liu et al. (2018) remind us that the government's disregard for local needs is significant in generating community resistance against large-scale projects; a phenomenon that has been widely

researched beyond project contexts in the social sciences more generally (e.g. Bourdieu and Nice, 1998; Smith, 2001; Çoban, 2004; Spierenburg et al., 2006; Obi, 2010).

In a *technocratic* approach, government elites take a back seat and rely heavily on the discretion of engineers and technical experts – i.e. a "technocratic, expert-based approach" (McAdam et al., 2010: 407) - focussed on innovative technological solutions and practices to legitimize construction, such as the tunnel boring machine technique and "state of the art technology" in the North-South line. While this approach was used in the North-South line to avoid the demolition of buildings and have minimum impact on the community (as was the case in the East line), this approach typically does not endorse the local embedment of projects in society as shown in our research when project actors of both cases shut out the local community and displayed oppressive (East line) or isolationist (North-south line) behaviour to quell social unrest. The dominance of such an approach has proven largely unsuccessful and been criticized by numerous project scholars (e.g. Engwall, 2003; Hodgson and Cicmil, 2006; e.g. Pollack, 2007; Söderlund, 2004; Van Marrewijk, 2015; Morris and Geraldi, 2011), calling for a paradigmatic shift in project management thinking.

Conversely, a *humanistic* approach is characterized by attention of project actors to community needs and interests. According to this paradigm, a project is perceived as deeply embedded in social interactions and multiple contexts (Manning, 2008), and project actors carry out extensive institutional work to (re)shape the relationship between a project and its environment. As such, this approach supports the local embedment of the project through improved and inclusive external stakeholder communication, and strategies directed at the human dimension (Aaltonen, 2013; Ashokan, 2015; Di Maddaloni and Davis, 2018). Unfortunately, this approach only emerged in the aftermath of the metro riots and the East-line's troublesome completion in 1975, with the public deinstitutionalization of 'the metro' which subsequently became taboo, and the memorialization of the demolished neighbourhoods through public art exhibited at the East line stations. In the North-South line, this approach became more prevalent after major technical mishaps, community resistance, and the temporary shutdown of the North-South line at the end of 2008, as project actors increasingly realized they needed to legitimize the project by gaining public support and acceptance from *outside* the project, being the Amsterdam community.

While all three approaches are situational and have been used interchangeably in both project cases, our findings suggest the administrative and technocratic approaches have been dominant (1960–2008), lacking in terms of the social and cultural skills needed to acknowledge, respond to, and accommodate locals as important and influential external stakeholders, encapsulated by the humanistic approach. We do not wish to imply that the administrative and technocratic approaches are necessarily 'bad' while the humanistic approach is 'good.' Rather, an amalgamation and delicate balance between *all* approaches is needed to legitimize the planning and implementation of large-scale infrastructure projects. Particularly the humanistic approach, while traditionally overlooked in the field of project management (Cicmil, 2006; Pollack, 2007; Hodgson and Cicmil, 2007), has become essential in recent decades, because "the public has become increasingly educated, informed, and empowered" (Liu et al., 2018: 613) and "community-based protests against major construction and engineering projects are becoming increasingly common" (Teo and Loosemore, 2014: 41). In this context, we found evidence for how institutional conflicts and pressures - in our case between project actors and local resistors - can provide opportunities for institutional transformation towards a more inclusive and humanistic approach, as called for by others (McAdam, 2011; Teo and Loosemore, 2011; Di Maddaloni and Davis, 2018). The phenomenon of resistance generating opportunities for transformation has been theorized in the field of organization science as 'productive resistance' (Courpasson et al., 2012), which requires further exploration in the field of project management. In this spirit, we urge project actors and scholars to perceive resistance as something constructive and enlightening, rather than as something detrimental that needs to be quelled.

The third main insight provided by a neo-institutional perspective, and building upon the previous point, is the importance of the institutional work (Lawrence et al., 2013) project actors carry out in pursuit of legitimacy. While institutional work was initially focused on economic and technological factors to legitimize the subway projects, over time it became more directed at managing social and cultural impacts and dynamics. Project actors had to respond to the belief systems and cultural schemas prevailing in the local community, which demanded a more meaningful say in the construction process. Local resistors went as far to organize their cause and take collective action to exert influence on project decision-making and proceedings, such as the social movement organizations 'Action-Group Nieuwmarkt' and 'the Strong Arm' (East line), and 'the Abovegrounders' and 'Save Amsterdam' (North-South line). Though these movements were unable to stop the construction of these projects, project actors had learned from the traumas and violence experienced during the East line that suppressing resistance was deemed unacceptable by society, requiring a different approach. When a technocratic approach did not suffice to mitigate resistance either, major efforts were taken especially by the North-South line project actors to step outside the technical tunnel vision and break the metro taboo by bringing "humanity back in", such as by inviting and involving residents to visit the construction sites during project excursions, open days and ritual events (2008–2018). Thus, to respond to community resistance, institutional work was required (though not always engaged in) in the form more inclusive and societally-directed practices to manage the institutional context of the project. Such practices are gradually becoming established in the field of project management on an international scale (Scott et al., 2011; Scott and Levitt, 2017), where project actors are learning to expect and respect local opposition, and to adapt their management approaches, interventions, and decision-making processes accordingly (Dewey and Davis, 2013). This is in line

with the paradigm of "do no harm" which is the idea that large-scale infrastructure projects should only proceed if their negative side effects on society are negligible or significantly mitigated (Altshuler and Luberoff, 2003; Lehrer and Laidley, 2008).

From a more critical perspective, it can be argued that the humanistic approach prescribing societally-oriented institutional work comprises rhetorical strategies of legitimacy (Suddaby and Greenwood, 2005) that frame the project in such a way "to inform and persuade an audience, to make people believe that the project is necessary, that it is for the benefit of society, that it will make for a better future, and that it is worth the time, investment and societal and environmental impact" (van den Ende, 2015: 160). This requires more political, strategic, and carefully orchestrated forms of symbolic communication (Carter et al., 2010; Kornberger and Carter, 2010; Kornberger, 2013) that are often elusive, visual, and aesthetic (Meyer et al., 2013); such as the public art exhibitions to memorialize the resistance against the East line, or the experiential project excursions and open days where local residents could witness being underground, walk through the metro tunnel, and even touch the tunnel boring machines. Similarly, ritualization emerged as an important symbolic mechanism of institutionalization (Meyer and Scott, 1992; Sillince and Barker, 2012; Islam, 2015; van den Ende and van Marrewijk, 2017) when the tunnel boring machines were publicly baptized and bestowed female names while tunnel workers were depicted as "heroes of the underground" during ritual events. Our analyses confirm ritual events are 'symbolic devices' (Suddaby and Greenwood, 2005) that are used strategically to gain legitimacy from external stakeholders, epitomizing project organizations as systems of meaning construction "which engage in politically motivated symbolic acts and myth making in pursuit of legitimacy" (Brown, 1994: 681). Indeed, Meyer and Rowan (1977: 348–349) explain that to become embedded in their environment, organizations must "incorporate elements which are legitimated externally rather than in terms of efficiency" and employ "ceremonial criteria of worth" which attribute accreditation, appropriateness and acceptance to the project (Scott et al., 2011). In sum, the institutional work of organizing ritual events, project excursions, open days, and other interactive platforms for external stakeholders not only responds to external pressures from the institutional environment (DiMaggio and Powell, 1983), but serves to attribute certain meanings to a project that appeal to a wider social audience and the media (van den Ende, 2015) thereby shaping standards of what constitutes a legitimate project within a particular environment (Scott and Levitt, 2017).

In light of the discussion above, the main implication of our research is that institutionalization comprises the strategic crafting of social and symbolic practices directed at influencing and gaining the acceptance and support of affected stakeholders; an increasingly important *skill* project actors need to acquire legitimacy and to manage the fragmented institutional environment of large-scale infrastructure projects. More specifically, while approaches and practices of institutionalization have transformed over the years, making way for a more inclusive, humanistic, and societally-oriented approach; this approach is simultaneously political and strategic by framing and socially constructing the project to acquire legitimacy. In this sense, managing the inter-institutional environment of different stakeholders and constructing the project in a socially acceptable way has become crucial in contemporary projects (Altshuler and Luberoff, 2003; Lehrer and Laidley, 2008; Scott and Levitt, 2017). It follows that in the 21st century of democratic societies, project legitimation not only depends the administrative authority and technological expertise aimed at the financial and physical construction of large-scale infrastructure projects, but increasingly more on the institutional work directed at the social construction of such projects.

14. Conclusion

This paper applied a neo-institutional perspective to investigate how project actors of two controversial infrastructure projects, the East line and the North-South line, aimed to acquire legitimacy in the face of community resistance and, thereby, attempted to embed these projects in the local environment of Amsterdam. We chose a neo-institutional lens to cast light on the social, cultural and political dynamics at play and the role of local communities as important external stakeholders in shaping organizational approaches and practices. Our study has shown how institutional conflicts between project actors and the local community concerning subway construction in Amsterdam since the 60s gradually facilitated an institutional transformation, catalysed by the situational necessity of institutional work to (re)shape the relation between a project and its environment. Herein, this research demonstrates not only the impact of the institutional environment on project planning and implementation but also the agency of project actors who socially construct the project and execute institutional work in their efforts to gain legitimacy.

The contribution of our research is twofold. The first theoretical contribution is the application of a neo-institutional lens providing three main insights into (1) the dynamic and recursive interrelation between large-scale infrastructure projects and their environment; (2) institutional change and transformation emerging from the conflictual interface between project actors and local resistors, and (3) the value of institutional work (Lawrence et al., 2013) project actors carry out in pursuit of legitimacy. Such a neo-institutional lens has not yet been fully explored in project management studies (Scott and Levitt, 2017; Geraldi and Söderlund, 2018; Biesenthal et al., 2018). The second contribution is our longitudinal empirical investigation, spanning over four decades, to exhibit the contextual dialectic of resistance and accommodation with an emphasis on shifting approaches of institutionalization, the constant struggle to acquire legitimacy, and the local embeddedness of projects, as asked for by scholars (McAdam, 2011; Scott et al., 2011; Scott and Levitt, 2017).

The findings of this study may help to encourage project actors to 'open up' their projects to local communities and stakeholders. Managing large-scale infrastructure projects should no longer be carried out behind fences, leaning on state-of-the-art technology, and repressing or hiding from social conflicts and resistance. Rather, constructing these projects, especially in urban settings, requires innovative and creative ways for gaining support and acceptance from external stakeholders (Aaltonen and Kujala, 2010), for giving local communities a more meaningful say in their construction and operation (McAdam, 2011), and for absorbing their self-induced shocks (Grabher and Thiel, 2014).

Future studies aiming to apply a neo-institutional lens should take more seriously topics of agency, power and conflict, and apply theories of productive resistance (Courpasson et al., 2012) and strategy-making (Suddaby et al., 2013) to shed more light on institutional change and practices of institutional work. Moreover, the inclusion of social movement theory can help to move beyond static conceptions of institutions and to better understand dynamic institutional processes (Greenwood et al., 2008). Finally, a renewed focus on the local communities in which project organizations operate and how communities influence intuitional work and processes is invaluable (Di Maddaloni and Davis, 2018).

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